



U.S. Department of Education Data Center Consolidation Plan

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FY12 Plan

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Developed by the
ED Office of the Chief Information Officer (OCIO)

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1. INTRODUCTION

The U.S. Department of Education (ED) fully supports the goals of the Office of Management and Budget (OMB) memoranda on the Federal Data Center Consolidation Initiative dated 26 February 2010 and [20 July 2011](#), and is well aligned to meet the goals established by the initiative.

As the smallest Cabinet-level agency consisting of more than 4,000 employees, ED has strived to maintain a centralized network infrastructure and data center support structure, previously known as “EDNet” that supported all of its sub-agencies. Beginning in 1998, ED significantly reduced the number of agency data centers and reduced the total cost of data center operations in response to [OMB Bulletin No. 96-02, Consolidation of Agency Data Centers](#). Since then, while the data center footprint had remained small, the amount of physical servers significantly increased – resulting in increased energy consumption and decreased server utilization.

Over the past seven years, several mid-size computer rooms (between 25 to 100 servers) were migrated into the EDNet government-owned, contractor data centers. Separately, the Office of the Chief Information Officer (OCIO) managed two government-owned, contractor-operated (GOCO) data center facilities, which housed a centralized IT infrastructure for all of the Department’s bureaus (each known as a Principal Office Component (POC) at the Department). These two data centers served as the primary and backup (or disaster recovery) facilities for EDNet. EDNet subsequently became EDUCATE (Education Department Utility for Communications, Applications and Technology Environment).

ED awarded EDUCATE as an outsourced managed services contract. EDUCATE supported “fee for service” cloud computing and server virtualization technologies, enabling ED to reduce and consolidate its underutilized physical servers and shrink overall energy usage. Via EDUCATE, ED has been able to shift IT infrastructure and real property needs from a government-owned and -operated model to a contractor-owned and -operated private cloud paradigm. In addition to EDUCATE, the Department maintains the VDC (Virtual Data Center) contract, supporting Financial Student Aid (FSA) line of business systems. ED recognizes that not all the constructs of a private cloud computing environment exist under EDUCATE and VDC and will evaluate each for instances where potential contract modifications may be beneficial.

ED is pleased to share that the agency is making significant progress toward shutting down one server room (by 4Q12) and relocating these assets to the primary data center. ED continues to proceed with optimizing server-based services and infrastructure through improved virtualization at existing contractor-based and government-based facilities.

2. AGENCY GOALS FOR DATA CENTER CONSOLIDATION

Consistent with Goal 9 of the Department’s first [Strategic Sustainability Performance Plan](#), dated 2 June 2010, the Department will continue to leverage its outsourced IT services framework, which is well aligned as a “private cloud” based on cloud computing models for [IT Infrastructure as a Service \(IaaS\)](#) under its two major contracts:

- [EDUCATE](#) – Education Department Utility for Communications, Applications & Technology Environment
- [VDC](#) – Virtual Data Center for Federal Student Aid

In both cases, the Department does not own its IT infrastructure and generally avoids capital expenditures by leveraging an ITIL-based Service Catalog for hardware, software and usage from a third-party provider as a

“managed service” or operational expenditure fee. Consistent with the Trusted Internet Connection (TIC) initiative, the Department with its EDUCATE and VDC model has been certified as a TIC Access Provider (TICAP).

2.1 QUALITATIVE IMPACTS OF ED’S DATA CENTER CONSOLIDATION EFFORTS

By migrating to a service-based contracting model, ED has reduced the Total Cost of Ownership for data center hardware, software and operations, introducing more effective [acquisition](#) and operations practices:

- Increasing the overall IT security posture of the federal government, by implementing better standardization, automation and continuous risk monitoring;
- Shifting IT investments to more efficient computing platforms and technologies, based on an agency’s mission, user demand and technology trends;
- Promoting the use of Green IT by reducing the overall energy and real estate footprint of government data centers, LAN closets and desktop energy use. In 2010, ED was awarded the Federal Electronics Challenge Bronze Level Award for its IT operations and maintenance activities.

2.2 QUANTITATIVE IMPACTS OF ED’S DATA CENTER CONSOLIDATION EFFORTS

The corresponding quantitative impacts for data center consolidation since 1998 include:

- Reduction in POC-specific data centers for enterprise-wide IT services including general office automation and employee collaboration needs such as (1) a single email system for all sub-agencies and (2) a single intranet for all sub-agencies to share storage.
- Through increased use of virtualization technologies and a shift from analog/ISDN to a Voice-over-IP (VoIP) phone systems, ED recently shut down over 25 supplemental air conditioning (A/C) units to LAN/telephone closets (< ~ 100 sq. ft.) that no longer hosted any heat-producing equipment. These actions resulted in a renegotiation of the costs of the facility services contract that includes the cost of utilities (electricity, water, etc). Beginning in FY12, this shutdown of 25 A/C units will result in over \$112,000 per year in cost savings.
- Reduction in administrative overhead for contract oversight and management for data center operations, i.e., only two (2) sets of Program Manager (PM), Contracting Officer Representative (COR) and Contracting Officers (CO) officials managing ED’s three major data centers and two server rooms. And reduction in facilities management overhead for real property negotiations, leasing and management.
- See this plan’s Cost-Benefit Analysis section for additional quantitative impacts.

3. IMPLEMENTING SHARED SERVICES/MULTI-TENANCY

The Department continues to seek and leverage the use of shared services to maximize the business value to employees and customers while minimizing costs.

3.1 INTERNAL SHARED SERVICES

The following is an overview of Internal Shared Services provided under the EDUCATE infrastructure within the Department:

1. WAN Management
2. LAN Management
3. Service Desk (Help Desk) Services
4. Cyber Security Services
5. Data Privacy Services
6. Identity and Access Management Services
7. IT Inventory and Asset Management Services
8. Server and Application Hosting / Website Hosting
9. Collaboration Tools
10. Email Services
11. Electronic Records Management Services
12. Business Support Services (e.g., HR, Payroll, Acquisition, Budget) [see section below on External Shared Services for additional information].
13. Video Teleconferencing Services
14. Telephone Services

In addition to its Internal Shared Services supporting all of the Department's 23 sub-agencies, the Department leverages External Shared Service providers for best-of-class solutions as described below.

3.2 EXTERNAL SHARED SERVICES HOSTED BY OTHER AGENCIES

The Department leverages the products and services hosted by other agencies in lieu of maintaining a departmental system, including:

Table 1. List of External Shared Services Hosted by Other Agencies

Service	Service Model	Deployment Model	Shared Service Provider (SSP)
Hiring Services OPM (via Monster Government Solutions) supports the ED-HIRES system for completing employee job descriptions and postings with USAJOBS.GOV.	SaaS	Shared Service Provider	Office of Personnel Management (OPM)
Personnel Folders OPM supports the Department through its Electronic Office Personnel Folder (eOPF) system, which provides secure access to employee personnel files in support of human resources / human capital.	SaaS	Shared Service Provider	OPM
Talent / Learning Management Services DOI NBC provided ED with a Learning Management Module (online learning, instructor-led course sign-up and SF-182 processing for external training) and the Performance Management Module (for employee performance appraisals) via https://tms.nbc.gov/ .	SaaS	Shared Service Provider	Department of Interior National Business Center (DOI NBC)
Payroll Services DOI NBC hosts the Federal Personnel Payroll System (FPPS), which is used for Payroll, Time & Attendance for ED employees.	SaaS	Shared Service Provider	DOI NBC
Workforce Transformation Services & Onboarding Services ED is leveraging the DOI NBC Tracking System (WTTS) / Entrance On-Duty System (EODS), which integrates with FPPS and ED-HIRES for the hiring	SaaS	Shared Service Provider	DOI NBC

Service	Service Model	Deployment Model	Shared Service Provider (SSP)
module and which allows Principal Offices to enter projected hires and dashboard information on a hiring. EODS provides electronic dynamic on-boarding forms to allow faster processing of on-boarding individuals with HR specialists. The system is designed to reduce the paperwork burden to HR specialists and the on-boarding employee.			
Cyber Security Services DOT FAA's Cyber Security Management Center provides for situational awareness and incident response services.	PaaS/SaaS	Shared Service Provider	Department of Transportation (DOT), Federal Aviation Administration (FAA)
Information Collection Services HHS and its http://www.paperworkreduction.gov/ website support the Information Collection Request, Review and Approval System, a web-based, enterprise-wide application for facilitating OMB clearances in accordance with the Paperwork Reduction Act of 1995. ED implementation of this shared service will replace ED's Information Collection System at http://edicsweb.ed.gov/ .	SaaS	Shared Service Provider	Department of Health and Human Services (HHS) (Implementation in FY12)

3.3 CLOUD COMPUTING SERVICES

In addition to its Internal and External Shared Service providers, the Department leverages Cloud Computing Services for best-of-class solutions in support of the “Cloud First Policy” and the [25-Point Implementation Plan to Reform IT Management](#) as described in the following section.

Table 2. List of Cloud Computing Services at ED

Service	Service Model	Deployment Model
Survey Services The Civil Rights Data Collection (CRDC) collects data on key education and civil rights issues in our nation's public schools for use by the Department as well as outside policymakers and researchers. The CRDC collects information about students in public schools, including enrollment, educational services, and academic proficiency results, disaggregated by race/ethnicity, sex, limited English proficiency and disability. By moving to a cloud solution, the CRDC was able to survey over 15% more school districts and make the surveys easier for districts to fill out by tailoring each survey so only applicable information was requested.	SaaS	Public Cloud
Agency Private Cloud Services ED is implementing a private cloud capability to offer Infrastructure as a Service offerings internally. By consolidating the Department’s IT infrastructure under this offering, ED is expecting improved asset utilization by 60-70%, a reduction in overall costs, improved service to its users, and greater agility in demand across the agency.	IaaS / PaaS	Private Cloud
E-Mail Messaging Security Services Spam filtering, spoofing, and quarantine services for email messaging senders and receivers are provided via a public cloud service provider.	SaaS	Public Cloud
Digital Communications Management Services Robust digital newsletter and email list services are performed by a public cloud service provider focused on government clients.	SaaS	Community Cloud

Service	Service Model	Deployment Model
Customer Relationship Management Services The Center for Faith-based and Neighborhood Partnerships at the Department uses a cloud-based provider of a customer relations management tool to track contacts and community outreach.	SaaS	Public Cloud
Web Content Hosting Services Federal Student Aid through its Enterprise IT Services (Consolidated ITA/EAI) and other small investments is merging over 70+ existing standalone websites into four integrated views for specific audience segments. These actions are also aligned well with OMB Memo M-11-24, Implementing Executive Order 13571 on Streamlining Service Delivery and Improving Customer Service .	IaaS/PaaS	Public Cloud

4. AGENCY APPROACH, RATIONALE AND TIMELINE

The Department consists of 22 major POCs, which include associated Federal Organizations such as the National Assessment Governing Board. In Oct 2010, the National Institute for Literacy was decommissioned and its core functions moved to the Office of Vocational and Adult Education (OVAE). For reference, White House Initiatives and major programs or divisions with POC divisions (and their corresponding Treasury Codes) are shown in Appendix A, *List of ED Program Office Components, Major Programs and Initiatives*. Since 1999, all POCs have been served by a centralized network infrastructure as described in Section 3.1.

The EDUCATE contract, which is completing Option Year 3, is currently wrapping up a technology refresh migrating from standalone physical server environment, consisting of generally underutilized (~40% utilization) infrastructure, to a virtualized infrastructure modeled after the IaaS-based “private cloud” cloud computing model with optimized virtual servers. These actions, which began in 2008, have already resulted in improved flexibility and customer service while reducing energy consumption. For example prior to EDUCATE, the Department maintained “server closets,” which housed several physical servers in each regional office and each Washington, D.C. area building. Each location had at least 4-6 physical servers; today each location generally has only two physical servers – one of which is a virtual server host, the other a print server. ED continues to explore opportunities to reduce that number even further and potentially eliminate local “server closets” and move all the server-based needs to the primary data center. In August 2011, ED shut down the supplemental air conditioning (A/C) systems in more than 25 LAN closets at the LBJ headquarters location; these actions resulted in a renegotiated energy savings utility contract that is projected to save at least \$112,000 per year.

4.1 MASTER PROGRAM SCHEDULE

ED has reached its (physical) consolidated end-state architecture and will seek to further improve its operations through increased virtualization on its existing “private cloud” cloud computing architectures.

With respect to data center facilities, the Department is consolidating the file server needs currently housed in the UCP Computer Room to the primary data center. In September 2011, ED completed the migration of all file types except for Outlook PST files from this DC-based facility to the primary data center. ED projects completing the migration of Outlook PST files and will decommission the UCP computer room by 4Q12.

Table 3. Consolidation Progress

Consolidation Progress							
Dept/Agency Name		U.S. Department of Education (ED)					
	Closed	Target Closing Numbers					
	4Q10	4Q11	4Q12	4Q13	4Q14	4Q15	TOTAL Closings Planned
Consolidation Targets- Facilities ≥ 100 sq. ft. - Reported in June 2011 Asset Inventory	0	0	1	0	0	0	1
Revised since June 2011 submission			NEW				NEW

In 2007, the U.S. Department of Education awarded a 10-year contract for a full range of Information technology services known as EDUCATE. The EDUCATE contract includes eight major categories of services: Desktop Services (CLIN001), Help Desk Services (CLIN002), Email Services (CLIN003), Systems & Data Center (CLIN004), Network, Telecommunications & Multimedia Services (CLIN005), Special Services (CLIN006), including: a) Office of Inspection General; b) Institute of Education Sciences; and c) Special Projects; Disaster Recovery Services (CLIN007); and Printer Services (CLIN008).

A major focus of the Systems & Data Center (CLIN004) element is improving server virtualization and IT equipment utilization resulting in reduced overall energy consumption, reduced software licensing costs, and improved customer service. In all, EDUCATE provides a common architecture for shared services and data exchange within the Department for all of its sub-agencies.

As part of the FY08 migration from government-owned data centers to the outsourced EDUCATE data centers completed in April 2009, the Department conducts quarterly reviews of bandwidth utilization and has identified the need to improve the bandwidth utilization of the primary and secondary circuits. In early 2010, ED downsized the primary circuits at seven locations and increased the backup circuit size in three locations---overall resulting in lower costs.

Pre-decisional evaluations are ongoing to further support the constructs of cloud computing (beyond the current IaaS-based private cloud), electronic stewardship, strategic sustainability, the Federal Data Center Consolidation Initiative, and the TIC programs.

The 22 major POCs are served by five major data centers:

Table 4. List of Data Centers for U.S. Department of Education

No.	Agency Component	Data Center	Action to be taken	Action Taken during Fiscal Year
1	Office of the Chief Information Officer (ED/OCIO) / EDUCATE	EDUCATE Primary Data Center	Consolidation: IaaS-Private Cloud: Increased Virtualization:	FY98-99 (COMPLETE) FY08-15 (ONGOING) FY09-15: (ONGOING)
2	Office of the Chief Information Officer (ED/OCIO) / EDUCATE	EDUCATE Backup Data Center	Increased Virtualization:	FY09-FY15 (ONGOING)
3	Federal Student Aid (ED/FSA)	Virtual Data Center (VDC)	Consolidation: Increased Virtualization:	FY98-FY99 (COMPLETE) FY09-FY15 (ONGOING)
4	Institute of Education Sciences (ED/IES)	IES Computer Room	Increased Virtualization:	FY09-FY11 (ONGOING)
5	Office of the Chief Information Officer (ED/OCIO)	UCP Computer Room for EDUCATE	Increased Virtualization: Consolidation:	FY09-FY11 (COMPLETE) FY12 (IN PROGRESS)

- **#1 & #2: EDUCATE Primary & Backup Data Centers.** Located at co-located, contractor-based facilities classified as “scope 3,” the centralized “private cloud” IaaS-based infrastructure known as EDUCATE provides office automation, desktop services, email services, web and application hosting, managed security services, managed printing and imaging services along with disaster recovery for associated mission critical systems. The Backup Data Center also serves as backup for the IES Computer Room mentioned below.
- **#3: Virtual Data Center (VDC).** Located at co-located contractor-based facilities classified as “scope 3,” the Virtual Data Center (VDC) is managed separately by FSA and supports its student financial assistance programs.
- **# 4: IES Computer Room.** Due to its unique process needs for statistics and research, the Institute of Education Sciences (IES) maintains a separate computer room housed in Washington, D.C., that is supported by the EDUCATE contract as a “special service.” Backup (or disaster recovery) services are

supported at the EDUCATE Backup Data Center (mentioned above). The IES Computer Room is located within government facilities and occupies less than 10% of the building's floor space.

- **#5: UCP Computer Room (NEW: CONSOLIDATE to PRIMARY DATA CENTER by 4Q12).** Due to previous latency issues between the headquarters locations and the EDUCATE Primary Data Center (mentioned above) for certain files types and systems, a computer room at Union Center Plaza (UCP) in Washington, D.C., has been employed to consolidate support for the file and print server needs of ED employees and staff at Washington, D.C., area locations. Since December 2007, ED consolidated file and print server needs to a single computer room versus a decentralized approach of housing these servers at individual LAN closets for each building. In July 2011, a solution was developed, and ED completed Phase 1 (non-PST Files) in September 2011 and is proceeding with Phase 2 (PST file migration) by 4Q12. Currently the UCP Computer Room for EDUCATE is located within government facilities and occupies less than 10% of the building's floor space.

5. AGENCY GOVERNANCE FRAMEWORK FOR DATA CENTER CONSOLIDATION

ED will continue to employ established IT governance structures at the Department level for the evaluation, acquisition strategy, and program/project management guidelines to maintain or further consolidate the existing data center footprint. Existing structures include:

- **Planning and Investment Review Working Group (PIRWG)** – membership is composed of executive stakeholders in charge of the agency's major IT investments and chaired by the CIO; reviews, revises and recommends acceptance/rejection of major (Exhibit 300) and supporting (Exhibit 53) IT investments.
- **Enterprise Architecture Review Board (EARB)** – membership is composed of OCIO and POC government officials and contractor technical specialists who review and approve/reject the acquisition of commodity software, infrastructure and operations (primarily those systems placed on the EDUCATE network); conduct reviews to eliminate isolated system solutions; and ensure products and services are consistent with the agency's Enterprise Architecture.
- **Change Advisory Board (CAB)** – composed of the contractor's technical specialists and government oversight officials who review and approve/reject proposed changes to configurations, security patches, implementations of systems and services to the EDUCATE and FSA-VDC networks, as appropriate.
- **Dedicated Data Center Consolidation Program Manager** – shortly after release of the 25-Point IT Reform Plan and the OMB Memorandum entitled "[The Data Center Consolidation Initiative](#)," ED designated a senior, dedicated data center consolidation program manager with project management experience and technical competence in IT infrastructure. Because data center consolidation requires interactions with many stakeholder groups, the data center program manager must also have strong communication skills. ED's program manager is active in the Federal Data Center Consolidation Task Force and recently served as a presenter for the FDCCI Industry/Government Day held August 31, 2011. The ED data center program manager is responsible for developing a plan with interim, verifiable milestones to reach the agency's data center reduction target and monitoring progress toward those goals.

In connection with upcoming the Government-wide Best Practices Report developed by the Task Force, ED will evaluate and incorporate these recommendations, to the extent practical, for consideration by the IT governance structures of the Department and its POCs.

- Evaluate potential impact and propose modifications to existing contracts (e.g., EDUCATE and VDC) to incorporate the developed common set of measures, to the extent practical.
- Evaluate existing and future IT program requirements using the FedRAMP program to increase adoption of shared services and cloud computing technologies.
- Develop and communicate policy guidance to ensure that new systems (e.g., websites and web hosting platforms) are hosted on authorized “shared service providers” or FedRAMP-approved cloud service providers.
- Develop and communicate policy guidance to ensure that new systems require that Internet access must be routed through an authorized TICAP (e.g., EDUCATE or VDC).

In September 2011, ED’s Privacy Technical Assistance Center hosted a webinar on Data Center Consolidation Considerations and Best Practices focused on the needs of state and local education agencies with presentations by the Virginia Department of Education and the Washington Office of Superintendent of Public Instruction. Visit <http://nces.ed.gov/programs/ptac/Toolkit.aspx?section=Webinars%20and%20Presentations> for a copy of the presentation and recording.

5.1 COST-BENEFIT ANALYSIS

With ED historically deploying a consolidated data center and centralized IT infrastructure (prior to the 2010-2015 FDCC Initiative) for all of its POCs, ED will focus on consolidating the storage needs located within one of its computer rooms to the primary data center and continue efforts to increase the use of virtualization technologies to reduce the overall physical footprint within outsourced facilities. ED projects one data center (the UCP computer room) to be consolidated through FY15; ED does not project any personnel reductions. ED does project at least \$112,000 in projected energy savings beginning in FY12 from the closure of more than 25 LAN/Telephone closets in August 2011. As previously stated, the Department does not own any major data centers and has no arrangements to take ownership of any data centers at the end of any contracts.

As alternative methods for providing/receiving data center services are identified, ED will evaluate them against the following criteria for cost savings and benefits to the Department:

1. **Consolidation and/or elimination of data center facilities.** ED maintains three (3) major data centers at two physical locations (since 2007) – with one of these locations serving as a disaster recovery facility. Further consolidation at the Tier I-IV data center level does not appear feasible; however, ED is proceeding with consolidation of its UCP Computer Room assets to the Primary Data Center through increased use of virtualization technologies, which allows ED to virtualize many existing assets within the server room/closets and move them to the three major data centers.
2. **Multiple agency tenancy at one or more data center facilities.** With respect to internal agency tenancy, ED is already operating with a consolidated (multi-subagency) infrastructure. Through its line of business initiatives, ED serves as a hosting provider for the grants management consortia.
3. **Consolidation, reduction, or elimination of wide area network circuits (voice, data, and video).** Since 1998, ED operates a single, consolidated wide area network (WAN) for all POCs for voice, video and data across all its nationwide locations.

4. **Consolidation, reduction, or elimination of local area network circuits (voice, data, and video).** Since 1998, ED operates a single consolidated local area network for each of its facilities.
5. **Implementation and/or expansion of green computing concepts to save energy and lower utility costs.** In 2009, ED completed an enterprise-wide computer refresh to EPEAT Gold- and Silver-rated desktop computers, notebook computers and monitors and was awarded the 2010 Federal Electronics Challenge (FEC) Bronze Level Award for its implementation of energy-saving IT operations and maintenance programs. ED is supported by flat-rate utility-based services from the General Services Administration at its employee locations.

However, ED does not believe it is likely to be successful in developing “scope 3” GHG emission, energy usage (kW) and associated PUE values for its “small footprint” within large co-located outsourced data centers employed by ED. A [draft report on Scope 3 Accounting and Reporting Standard](#) developed by *The Greenhouse Gas Protocol Initiative*, (in part) states the following:

“Using financial based accounting in outsourcing as a proxy for electricity consumption/GHG emission is likely to distort the actual emission picture. If a data center operator were to disclose its total electricity consumption for a facility, and the customer knew what percentage of total servers it accounted for, it could estimate the portion of electrical consumption its outsourced activities were responsible for. However, because (i) load balancing, rack configuration, and cloud computing have a material effect on consumption/emission and (ii) data center electricity consumption is such a significant emission source, multiplying the percentage of servers at the facility by total electrical consumption is likely to produce an unreliable proxy for actual emissions from the outsourced activity.”

Additional details on ED’s scope 3 GHG emission calculations may be found in our [Strategic Sustainability Performance Plan](#).

6. **Implementation and/or expansion of cloud computing services (Saas, PaaS, or IaaS) to lower delivery costs.** ED is cautiously exploring the use and expansion of cloud computing services to lower delivery costs. As previously mentioned, the EDUCATE and FSA-VDC contracts have elements of an IaaS private cloud computing model. Refer to Section 3.3 of this document for more examples of ED’s cloud computing programs.
7. **Application virtualization and corresponding reductions in host servers.** Application virtualization is the primary method that ED seeks to leverage in the next several years to drive reductions in host servers.
8. **Consolidation of intra-campus cable plants for telephone and data.** As only one cable plant exists for each physical location where ED employees exist, this consolidation is not applicable. As previously mentioned, ED shut down 25+ air-conditioning units in August 2011 that were housing energy-producing ISDN backend equipment. With full migration to VoIP, shutting down the A/C in these telephone closets will result in at least \$112,000 per year in annual energy savings.
9. **Reduction in Help Desk and IT Asset Management service costs through consolidation.** ED is already operating with a [single](#) ITIL-based Help Desk and IT Asset Management service contract for these needs.

5.2 RISK MANAGEMENT AND MITIGATION

The Department employs several methodologies for tracking and mitigating risks at the three levels: project, component/system and data center.

- **Project-level Risks:** primarily a function of the Project Management Office for a given project; project risks are tracked in a centralized database along with other PM documentation and templates. Risks are reviewed within the project team and presented using established templates on a weekly basis to the OCIO Information Technology Services (ITS) division's leadership team. Matters are escalated as appropriate.
- **Component/System Risks:** System-level risks are the responsibility of the system owners. That said, all systems rely on either the EDUCATE or FSA-VDC data centers, and system owners and administrators work in partnership to identify and mitigate risks and respond to issues.
- **Data Center:** Data center risks are handled by the associated contractor oversight boards and committees and through risk management plans for the EDUCATE and FSA-VDC contracts, which support all data centers, server rooms/closets at ED. A Joint Risk Management Board consists of senior leadership from OCIO ITS, OCIO Information Assurance Services and OCFO Contracts and Acquisition Management. Risks are monitored via ITIL-based Risk Management practices within the contracts with numerous government and contractor personnel holding professional certifications for risk, governance, security, auditing, project management frameworks and processes (e.g., [CRISC](#), [CISA](#), [PMP](#), [CGEIT](#), [CISSP](#), [FAC-P/PM Level III](#), [FAC-C](#), [FAC-COTR](#), [NSA-IAM](#), [CAP](#), [ITILv3](#), [COBIT](#)).

Since ED is physically consolidated and follows a private cloud service model, ED believes tracking of data center consolidation risks is more appropriate than developing and maintaining a consolidation risk management plan. ED notes that the Department does not own any major data centers and has no arrangements to take ownership of any data centers at the end of any contracts.

The Department continues to consider consolidation challenges and lessons learned from its own consolidation experiences and incorporate relevant experiences from state and local efforts and [case studies](#), and from the efforts of other federal government members of the Data Center Consolidation Task Force.

5.3 ACQUISITION MANAGEMENT

The acquisition strategy for ED data center consolidation will be focused on driving increased value with the existing (i.e., EDUCATE and VDC) and future contract vehicles for enterprise-wide IT services that would support both lower operational costs while improving information security and compliance with the TIC program. As stated above, ED's primary focus is to obtain benefits by logical reductions through virtualization technologies and decommissioning of unneeded resources, which will drive a reduction in physical rack space and floor space – both of which are primarily outsourced. ED is currently evaluating the use of expanding in-house TIC capabilities within the EDUCATE and VDC contract vehicles and comparing its cost-benefits with providing the solution using the GSA Networkx Managed Trusted Internet Protocol Services solution.

5.4 COMMUNICATIONS STRATEGY

The communications strategy for ED data center consolidation will be very minimal since ED has historically been a centralized IT infrastructure for Internal Shared Services (see Section 3) for all of its 23 sub-agencies and no additional effort to further consolidate physical locations is projected. Coordination and communication with system owners does exist now as ED is undergoing a large Windows-based server upgrade project moving primarily from Windows 2000 / SQL 2000 physical servers to Windows 2008 / SQL 2008 virtual servers.

APPENDIX A – LIST OF ED PRINCIPAL OFFICE COMPONENTS, MAJOR PROGRAMS AND INITIATIVES

Table 5. List of ED Principal Office Components, Major Programs and Initiatives.

POC No.	Code	ED Principal Office Component (POC)	Acronym
	9100	EDUCATION , Department of	ED
1	9101	Office of the Secretary	OS
		<ul style="list-style-type: none"> Center for Faith-based and Neighborhood Partnerships 	<ul style="list-style-type: none"> OS / CFNP
		<ul style="list-style-type: none"> International Affairs 	<ul style="list-style-type: none"> OS / IAO
		<ul style="list-style-type: none"> Risk Management Service 	<ul style="list-style-type: none"> OS / RMS
		<ul style="list-style-type: none"> Office of Educational Technology 	<ul style="list-style-type: none"> OS / OET
2	9102	Office of the Deputy Secretary	ODS
		<ul style="list-style-type: none"> White House Initiative on Asian Americans and Pacific Islanders 	WHIAAPI
		<ul style="list-style-type: none"> White House Initiative on Educational Excellence for Hispanic Americans 	WHIEHA
3	9108	Office of the Under Secretary	OUS
		<ul style="list-style-type: none"> White House Initiative on Historically Black Colleges and Universities 	WHIHBCU
		<ul style="list-style-type: none"> White House Initiative on Tribal Colleges and Universities 	WHITCU
4	9103	Office of the General Counsel	OGC
5	9104	Office of the Inspector General	OIG
6	9105	Office of Management	OM
7	9115	Office of the Chief Information Officer	OCIO
8	9106	Office of the Chief Financial Officer	OCFO
9	9107	Office of Legislative and Congressional Affairs	OLCA
10	9109	Office of Communications and Outreach	OCO
11	9110	Office of Planning, Evaluation and Program Development	OPEPD
12	9111	Office for Civil Rights	OCR

POC No.	Code	ED Principal Office Component (POC)	Acronym
13	9121	Office of English Language Acquisition	OELA
14	9139	Institute of Education Sciences	IES
	9138	• National Center for Education Statistics	NCES
	9135	• National Center for Education Research	NCER
	9136	• National Center for Special Education Research	NCSER
	9137	• National Center for Education Evaluation and Regional Assistance	NCEE
15	9131	Federal Student Aid	FSA
16	9146	Office of the Elementary and Secondary Education	OESE
	9141	• Immediate Office of the Assistant Secretary for Elementary & Secondary Education	• OESE / IO
	9140	• Student Achievement and School Accountability Program	• OESE / SASAP
	9145	• Office of Indian Education	• OESE / OIE
	9144	• Impact Aid Programs	• OESE / Impact Aid
	9143	• School Support and Technology Programs	• OESE / SSTP
	9147	• Academic Improvement and Teacher Quality Programs	• OESE / AITQP
17	9134	Office of Postsecondary Education	OPE
	9130	• Immediate Office of the Assistant Secretary for Postsecondary Education	• OPE / IO
	9129	• Fund for the Improvement of Postsecondary Education	• OPE / FIPSE
	9133	• Office of Higher Education Programs	• OPE / OHEP
18	9124	Office of Special Education and Rehabilitative Services	OSERS
	9128	• Immediate Office of the Assistant Secretary for Special Education and Rehabilitative Services	• OSERS / IO
	9125	• National Institute on Disability and Rehabilitation Research	• OSERS / NIDRR
	9126	• Rehabilitation Services Administration	• OSERS / RSA
	9127	• Office of Special Education Programs	• OSERS / OSEP
19	9120	Office of Vocational and Adult Education	OVAE
20	9150	Office of Innovation and Improvement	OII

POC No.	Code	ED Principal Office Component (POC)	Acronym
21	9155	Office of Safe and Drug-Free Schools	OSDFS
<u>Associated Federal Organizations</u>			
22	• 916A	• Advisory Councils and Committees	• Various
	• 916B	• National Assessment Governing Board	• NAGB
	• 916C	• National Institute for Literacy (removed <i>Oct 2010</i>)	• NIFL
	• 916D	• Federal Interagency Committee on Education	• FICE